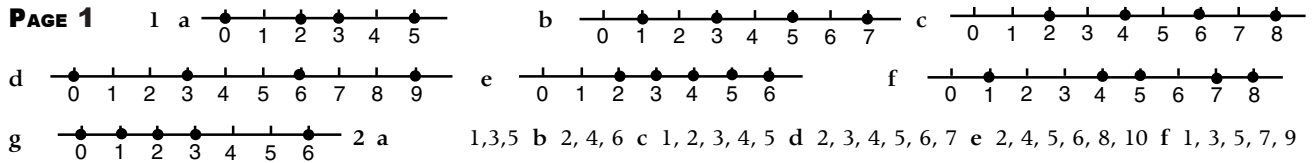


Answers – Directed numbers

PAGE 1



g 0, 2, 4, 6, 8, 10 3 a 12 b 14 c 19 d 2 e 1

PAGE 2 1 a going down b going west c going south d withdrawing money e losing \$10 f three floors down
g 5° above zero h decrease of \$30 i 15 steps to the left j 80 metres below sea level 2 a +30 b +10 c -12 d -80 e -1
f -15 3 a +5 b -4 c -2 d +5 e +3 4 a +10 +5 = +15 b +14 +9 = +5 c -12 +20 = +8 d +6 +9 = +15

PAGE 3 1 a +3 b +4 c +5 d +4 e +7 f -6 2 a +8 b -3 c +3 d +2 e +6 f +8 3 a -4 b +10 c +7 d +6
e +3 f +6 g +7 h +3 i -2 j -4 k -3 l -5 4 a -7, -2, -1, +1, +3 b -9, -3, -2, 2, 3, 8 c -7, -3, -1, 2, 3, 5
d -8, -4, -1, 2, 5, 8, 9 5 a > b > c > d < e < f > g < h < i < j > k < l <

PAGE 4 1 a +15 b +5 c +4 d +6 e +6 f +8 g +11 h +10 i +11 2 a -3 b -4 c -4 d -3 e -5 f -5 g -6 h -9
i -7 3 a -4 b -6 c -6 d -5 e -5 f -5 g -7 h -8 i -12 4 a -3 b -5 c -6 d -9 e -13 f -16 g -6 h -10 i -16
5 a +12 b +16 c +7 d -7 e -12 f -15 g 0 h -5 i -5 6 a -3 b +7 c -5 d +2 e -5 f -6 g -9 h +11 i +3

PAGE 5 1 a 3 b 3 c 7 d +2 e +6 f +2 g +1 h +7 i +3 2 a +7 b +11 c 13 d +9 e +11 f +15 g +12 h +6
i +15 3 a -20 b -10 c -14 d -18 e -10 f -14 g -15 h -20 i -11 4 a -1 b -2 c -3 d -4 e -1 f -5 g -4 h -2
i -5 5 a 0 b +10 c +18 d -25 e 0 f -3 g 0 h -19 i -24 6 a -4 b -3 c -12 d 14 e +4 f -10 g -18 h -17 i -9

PAGE 6 1 a +6 b +6 c +21 d +36 e +42 f +24 g +9 h +15 i +22 2 a -6 b -15 c -36 d -32 e -28 f -35
g -18 h -21 i -72 3 a -12 b -8 c -55 d -30 e -24 f -14 g -33 h -24 i -24 4 a +12 b +48 c +72 d +10 e +15
f +5 g +42 h +32 i +48 5 a +27 b -40 c -6 d -21 e +56 f -42 g +60 h +36 i +90 6 a +7: +63, -70, -35;
-6: -54, +60, +30 b +6: -48, -42, -18; -5: +40, +35, +15 c -7: -42, +84, +63; +8: +48, -96, -72

PAGE 7 1 a +5 b +4 c +4 d +9 e +7 f +8 g +3 h +4 i +7 2 a -6 b -3 c -3 d -5 e -9 f -4 g -2 h -12
i -7 3 a -9 b -4 c -3 d -3 e -1 f -1 g -3 h -12 i -9 4 a -2 b -2 c 2 d $-\frac{1}{2}$ e 4 f 4 g 8 h 1 i -2 5 a 4 b -11
c -3 d -36 e -7 f 27 g 8 h 7 i -3 6 a +5 b -20 c -2 d -7 e -10 f -3 g +4 h +3 i +20

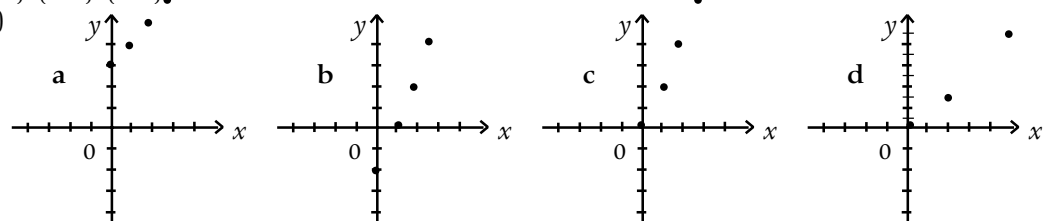
PAGE 8 1 a -15 b +12 c +34 d -12 e -20 f -44 g -4 h -4 i -1 2 a -6 b 2 c -17 d +5 e -19 f +14 g +16
h +6 i +11 3 a +6 b -7 c 17 d 96 e -8 f 8 g -24 h -9 i 6 4 a +24 b +25 c 4 d 21 e 18 f -19 g -3 h 20 i 2
5 a -9 b -36 c -3 d -21 e -49 f -2 g -24 h -24 i -9 6 a -2: +2, -8, -10, +8, -5; +7: +11, +1, -1, +17 +4;
-5: -1, -11, -13, +5, -8 b +3: -9, +12, -6, +18, -15; -7: +21, -28, +14, -42, +35; -4: +12, -16, +8, -24, +20

PAGE 9 1 a (0, 3), (1, 4), (2, 5), (3, 6).

b (0, -2), (1, 0), (2, 2), (3, 4)

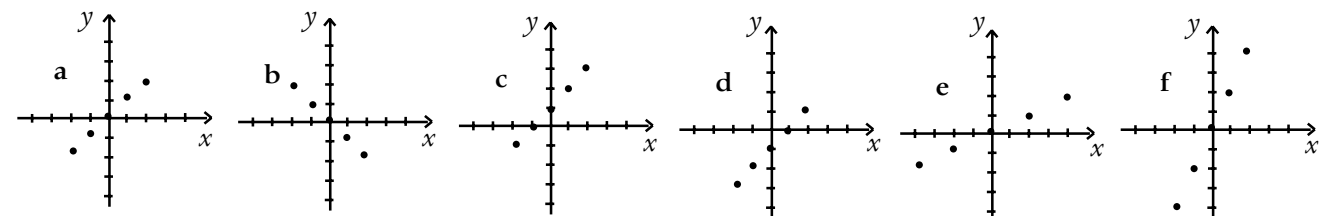
c (0, 0), (1, 2), (2, 4), (3, 6)

d (0, 0), (1, 1), (2, 4), (3, 9)



2 a (1, 1), (2, 2), (3, 3), (4, 4), (5, 5) b (0, 1), (1, 2), (2, 3), (3, 4), (4, 5) 3 a 7, 16, 22, 25, 31 b 6, 8, 10, 12, 14

PAGE 10 1 a (-2, -2), (-1, -1), (0, 0), (1, 1), (2, 2) b (-2, 2), (-1, 1), (0, 0), (1, -1), (2, -2) c (-2, -1), (-1, 0), (0, 1), (1, 2),
(2, 3) d (-2, -3), (-1, -2), (0, -1), (1, 0), (2, 1) e (-4, -2), (-2, -1), (0, 0), (2, 1), (4, 2) f (-2, -4), (-1, -2), (0, 0), (1, 2), (2, 4)



PAGE 11 1 a (2, 2) b (-3, -2) c (-4, 4) d (2, -2) e (5, 0) f (-3, 1) g (4, 3) h (7, -2) i (-6, -1) j (-5, -4)
k (-5, 3) l (3, 4) m (7, 2) n (5, -3) o (0, 0) p (-2, 3) q (0, -3) r (0, 4) s (2, 3) t (-6, 2) u (5, -2) v (8, -4)
w (-3, -5) x (3, 1) 2 a U b Q c F d E e A f B g L h R i J j O k I l D m T n G o M p N q K r P s C t S
u W v H w V x Z

PAGE 12 1 2 km north 2 withdrawal of \$200 3 -5, -6 4 -3, +2 5 -5 6 loss of \$5000 7 -9° 8 loss of 2 kg 9 +12
10 18 11 -9 12 -20 13 -2 14 -3, -1, 2 15 -3, -4

PAGE 13 1 C 2 B 3 A 4 D 5 B 6 A 7 C 8 D 9 B 10 A 11 C 12 B

PAGE 14 1 -6 2 66 3 -16 4 -63 5 46 6 +15 7 -24 8 -2 9 +5 10 -10 11 -11 12 -26 13 0 14 -12 15 -6